# SeaScribe Overview



## Overview

SeaScribe is a dive logging software developed by ONC's Software Engineering team to support ONC expeditions. Two major factors motivated development. The first goal was to design a system that could be easily implemented on different ships and support different ROV environments. The second objective was to enable a streamlined integration with internally developed web-based software like SeaTube, a portal to archived dive videos combined with their dive logs, navigational data, and metadata.

Software developers selected a web-based approach that could be implemented as an isolated system on a ship. The entire Oceans 2.0 software suite, a database instance, and web server are deployed on a simple workstation with a LINUX operating system and two hard-drives. A second workstation may serve as a back-up. The system supports simultaneous dive loggers, ships, and ROVs. Each observation is UTC time-stamped, whose link in SeaScribe generates a framegrab from the highest resolution video that has been archived (this feature is only available if accessing SeaScribe from the dmas.uvic.ca domain). If navigational data is archived in Oceans 2.0, each observation is georeferenced with a latitude, longitude, depth and heading.

## Components

The dive logging system uses a 3-tiered hierarchy and associated metadata. All of the features of SeaScribe are available in Oceans 2.0 under More > Infrastructure > SeaScribe.

### Expeditions

- Expedition Listing menu: Select to view a list of supported expeditions.
- Metadata Fields: expedition name, platform name, organization, start date, end date, description, reference URL (if applicable), active status (determines whether or not the expedition is visible in WTA website);
- Features:
    - Select Expedition: Select the cruiseid to see detailed metadata for any entry. Authorized users can add new cruises and edit cruise metadata.
    - Sort Expeditions: Expeditions can be resorted by clicking table column headers.

### Dives

- Dive Listing menu: Select to view a list of all the dives for a given cruise.
- Features:
    - Select Dive: Select the diveid to see metadata for any dive, and its associated log entries.
    - Add Dive:  Authorized users can add dives.
    - Sort Dives: Dives can be resorted by clicking table column headers.
    - Export to CSV: Export table as a CSV file.

### Dive Log

View, edit or add metadata and observations for this dive (depending on user permissions).

- Metadata tab fields
    - ROV Dive ID:  Follows a convention where the first letter(s) indicate the ROV followed by a sequential number; must be unique. Before a cruise, it is important to determine the ROV dive number to start at.
    - Expedition: Identifies the cruise or expedition for the dive
    - Dive Id: A unique key in the Digital Infrastructure database. This is autogenerated by the software.
    - Platform: The ROV must be selected so that dive log observations and SeaTube features can determine downstream

instruments available.
    - Dive Comments: Describes main objectives of dive. Refer to the most recent dive plan when populating this field.
    - Area: The geographic area where the dive takes place. For network platforms, use the node-level name (e.g., Barkley Canyon, Endeavour, Folger Passage, Strait of Georgia), not the name of the platform. For other regions of interest, use a best descriptor of the geographical area (e.g., Effingham Inlet, Barkley Sound).
    - Dive Chief: Name of the dive chief (list is controlled by User Management tool)
    - Date From and Date To: UTC times at which the dive starts and ends. These should match the first (DIVE START) and last dive log entry (DIVE END) times for proper viewing in SeaTube.
    - Active: Indicates the active dive for display on the Wiring the Abyss website.
    - SeaTube Ready: A flag that determines whether the dive will appear in the Oceans 2.0 SeaTube tree. Select this field IF a video stream is being sent to and recorded by ONC for archival AND is meant to be available.
    - Default Camera for SeaTube: All video cameras for the platform will appear in a drop-down menu. The camera selected here defines the default camera for viewing in SeaTube for that dive (first tab).

- Observations tab features
    - Filter Observations: A filter can be used to search for specific observations.
    - Sort Observations: The log observations can be resorted by clicking table column headers.
    - Auto Refresh (de-selected by default): Enables frequent refreshing of dive log entries to serve multiple loggers at a time
    - Create observation: Select to create a new observation (the time of observation will be the time of selection)
    - Quick observation: Select to populate a quick entry when an accurate timestamp is desired, but there is insufficient time to fill in details. Be careful to edit these entries soon after so that their purpose is not forgotten. If unedited, these may be deleted post-cruise.
    - Navigational Data: Navigation system data is displayed based on the mobile site configuration for the ROV, if there is a recorded value sufficiently close in time to the annotation. ROV navigational data is generally integrated with comments post-dive.
    - Export to CSV: export a CSV version of the dive log
    - Frame grab: Clicking the timestamp should return a frame grab for the highest resolution video available in the archive at that time. This feature does not work at sea since the archive is not local.
    - Pagination: The number of visible observations is controlled by pages, defaulting to most recent observations listed first.

## Observations

- Fields
    - Observation Id: A unique key in the Digital Infrastructure database *(automatically populated)*
    - Resource Id: By default, the ROV Dive ID is selected. The drop-down allows the logger to specifically attribute annotations to instruments mounted on the ROV platform (if this information has been pre-entered by ONC Data Stewards). This may be applicable in a number of situations, such as comments about CTD data or video camera issues.
    - Time (UTC): Timestamp for observation *(automatically populated but can be edited or refreshed if necessary).* The dive date from and dive date to values displayed to remind you to keep the observation timewithin the time range of the dive itself.
    - Tag (optional): Apply a tag if it will be useful for future filtering
    - Description: Use this field to enter your comment. Drop down menus below (Seafloor, Operations, Organisms, Other) can be used to populate text with standardized syntax.
    - Modified By: The name of the logger that entered or last modified the comment *(automatically populated).*
    - Last Modified: The time when the observation was most recently updated.
- Shortcuts
    - CTRL-E: to enter an observation from the Dive Listing page
    - CTRL-S: to save an observation from the Observation page

## Dive Log Tags

View, edit or add dive log tags on this page. Only edit or add tags as instructed by the Data Stewardship team.

- The ‘Name’ will appear in the drop-down menu of the associated ‘Category’ when creating an observation. The ‘Description’ is inserted into the observation whenever that tag is selected. This feature allows for frequently used comments to easily adhere to a syntax. Categories currently implemented include Operations, Organisms, Seafloor, and Other. Selecting an item from a category inserts text into the observation field for quick annotations. For example, the Organism category might be organized by phylum (e.g., annelids, arthropods, chordates, etc.). Custom templates can be added and edited within each category.
- These special flags are used to help filter log entries that can be used for post-cruise action items or to assist with future cruise planning. These tags do not need to be typed as text as part of the observation.

| Tag | Usage |
|---|---|
| Data Stewardship | Information that conflicts or is missing in database metadata (e.g., SN on an instrument) |
| Engineering | Future dive planning notes, cable or connector concerns |
| Navigation (may be deprecated in favour of ability to annotate directly to the navigation device) | ROCLS landing sites, temporary locations, exposed cables |

| | |
|---|---|
| Science | Changes or interesting features in study area (biology, geology) |
| Sampling | Physical samples like push-cores, water samples, organisms |
| Debris | Anthropogenic debris observed like fishing gear, trash or Alvin weights |
| Survey | Apply at the start and end of surveys. See more details in the Survey documentation. |

## Dive Log Quick Entries

View, edit or add dive log quick entries on this page. Only edit or add quick entries as instructed by the Data Stewardship team.

The ‘Name’ will appear in the drop-down menu of the associated ‘Category’ when creating an observation. The ‘Description’ is inserted into the observation whenever that item is selected. This feature allows for frequently used comments to easily adhere to a syntax. Categories currently implemented include Deck Operations, Operations, Organisms, Sampling, Seafloor, and Other. Selecting an item from a category inserts text into the observation field for quick annotations. For example, the Organism category might be organized by phylum (e.g., annelids, arthropods, chordates, etc.). Custom templates can be added and edited within each category.

# Ship and Shore-based Logging

Both ship-based and shore-based logging (dependent on communications with ship) are supported. In the case that logging is occurring both on ship and shore, synchronization will occur between both systems whenever communications are available. If communication is disconnected, synchronization will occur at reconnection.

# General Tips & Reminders

- Do not play video from SeaTube or WTA website during cruise due to limited incoming bandwidth unless absolutely necessary to check streams are working properly. Better to have someone on shore check this.
- When logging at sea, use the IP address for your server, not dmas.uvic.ca as a root of your URL.
- Recommending going directly to http://dmas.uvic.ca/Cruises (replacing the domain with the IP), because going to the home page of Oceans 2.0 (Data Search) can cause problems due to the Google map interface.
- Since observations cannot be deleted, edit errors as needed OR put 'DELETE' in the observation and we can filter and remove these later.
- Only tables specific to dive logging are synchronized with onshore systems (e.g., dives, dive observations, etc). Other metadata can be seen in the ship Oceans 2.0, but modifications are not synced and thus serve no utility.
- If the website slows down and logging is compromised, notify shore support IMMEDIATELY so that it can be investigated and resolved.